

12. (Amended) A method for producing a soluble PHEX enzyme or an inactive mutant thereof, which comprises the steps of:

- allowing the eukaryotic host of claim 10 to express said nucleic acid, and
- recovering the soluble PHEX enzyme or mutant thereof as a secretion product of said host.

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13. (Amended) An antigenic composition, which comprises the enzyme of claim 1.

14. (Amended) An antibody capable of binding to PHEX and raised against the enzyme of claim 1 or fragment thereof.

19. (Amended) A hybridoma producing the antibody of claim 16.

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20. (Amended) A composition comprising the enzyme of claim 1 or the nucleic acid as defined above and a pharmaceutically acceptable carrier.

21. (Amended) A composition comprising the enzyme of claim 3 and a pharmaceutically acceptable carrier.

22. (Amended) A composition comprising the antibody of claim 14 and a

pharmaceutically acceptable carrier.

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23. (Amended) A diagnostic reagent for detecting the presence or amount of PHEX, comprising the antibody of claim 14.

CONT.

24. (Amended) A diagnostic kit for detecting the presence or amount of PHEX comprising the antibody of claim 14.

26. (Amended) A method for detecting the presence or an amount of PHEX in a sample, which comprises the steps of:

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- contacting said sample with the antibody of claim 14 in conditions such that the immune complex can form; and
- detecting the immune complexes as an indication of the presence or amount of PHEX in said sample.

27. (Amended) A device for purifying PHEX or a mutant thereof which comprises the antibody of claim 14.

28. (Amended) A device for screening PHEX ligands, which comprises the soluble PHEX enzyme or a mutant thereof as defined in claim 1.

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33. (Amended) A method for obtaining a PHEX ligand which comprises the

steps of:

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cont.

- contacting a sample containing one or more molecules with a PHEX enzyme or mutant as defined in claim 1 in conditions such that binding of said one or more molecules with PHEX can occur;
- detecting said binding as an indication of the presence of a PHEX ligand in said sample; and
- selecting said PHEX ligand.

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37. (Amended) A method for evaluating PHEX activity in a sample which comprises the steps of contacting the sample with a substrate as defined in claim 35 , or preferably with PTHrP107-139, in substantially phosphate-free conditions and observing the apparition of a cleavage product of said substrate or PTHrP107-139 as an indication of PHEX activity in the sample.

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cont.

39. (Amended) A method for evaluating the activity of a molecule for its capacity of being an inhibitor of PHEX comprising the steps of:

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- contacting said molecule with a substrate as defined in claim 35 , or preferably with PTHrP107-139, and the PHEX enzyme of claim 1 in substantially phosphate-free conditions; and
- observing an inhibition of the formation of a cleavage product as an indication that said molecule is a PHEX inhibitor.

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CONT.

40. (Amended) A kit for executing the method of claim 35.

100 90 80 70 60 50 40 30 20 10 0